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Data Sheet
IAM48™
Input Power Conditioning Module

Shown actual size:
2.28 x 1.45 x 0.5 in
57,9 x 36,8 x 12,7 mm

Features

- Wide input voltage range
- High surge withstand
- 97% Efficiency
- Input reverse polarity protection
- On/Off control feature
- MicroMod Package

Primary Function

- Inrush current limiting
- Input transient protection

Products Highlights

The 2nd Generation IAM48 is a component level, DC input front-end designed to occupy minimum board space while providing maximum transient protection for today's sophisticated electrical systems. The IAM48, in combination with Vicor's 48V input 2nd Generation DC-DC converters, provides a highly efficient, high density power system with outputs from 1 to 100Vdc.

When the IAM48 is used with the Vicor FM48-FiltMod, the combination meets the conducted EMI specifications of Telcordia, FCC and European Norms.

Compatible Products

- FM48-FiltMod
- 2nd Generation 48V input DC-DC converters

Part Numbers

IAM 48 10 C 1 1

- *Output Current*: *10=10Amp, 20=20Amp*
- *Product Grade*: *C=-20° to 100°C, T=-40° to 100°C*
- *Baseplate*: *1=Slotted, 2=Threaded, 3=Thru-hole*
- *Pin Style*: *1= Short Pin, 2= Long Pin, S= Short ModuMate, N= Long ModuMate*

Absolute Maximum Rating

Parameter	Rating	Unit	Notes
+In to –In	80	Vdc	Continuous
+In to –In	100	V	100ms
+Out to –Out	75	Vdc	Continuous
Mounting torque	5(0.57)	in-lbs	6 each, #4-40 or M3
Pin soldering temperature	500 (260)	°F(°C)	<5 sec; wave solder
Pin soldering temperature	750 (390)	°F(°C)	<7 sec; hand solder
Storage temperature C–,T–Grade	-40 to +125	°C	
Operating temperature C–Grade	-20 to +100	°C	Baseplate
Operating temperature T–Grade	-40 to +100	°C	Baseplate

IAM48 Specifications

(typical at T_{BP} = 25°C, nominal line, unless otherwise specified)

Parameter	Min	Typ	Max	Remarks
Input voltage	36Vdc	48Vdc	76Vdc	Continuous
Inrush limiting			14mA/µF	6A with 330µF capacitor (See Fig 1)
Safety approvals	UL 1950, CSA 22.2-950, EN 60950			
Transient immunity				
Telcordia-GR-499-CORE Section 132			200V	1µsec duration
ETS 300 386-1 Class 2			200V	5.0µsec rise time, 50µsec duration surge
			250V	1-100 nsec burst
				When used with Vicor FM-48 filter module
Dielectric withstand	1,500Vrms			Input/Output to base
Output current				Delivered current to any
IAM4810C12			10A	combination of Vicor's 2nd Generation
IAM4820C12			20A	48Vin DC-DC converters
Efficiency		97%		Internal voltage drop is 1.1V max. @ 20A, 100°C baseplate
ON/OFF control				
ENABLE(ON)	0.0Vdc		1.0Vdc	Referenced to –Vout.
DISABLE(OFF)	3.5Vdc		5.0Vdc	100KΩ internal pull-up resistor
Reverse polarity protection				No damage to module, external fuse required
External capacitance				See Fig 3
IAM4810C12	10µF		150µF	100V
IAM4820C12	100µF		330µF	100V
Weight	1.7 ounces (50 grams)			
Warranty		2 years		

Typical Inrush Limiting and Transient Immunity Characteristics

Inrush Limiting

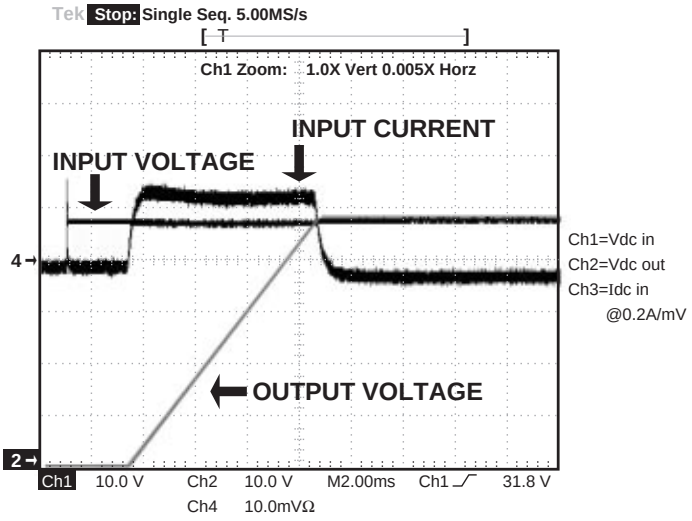


Figure 1*—Inrush current with 330µF on the IAM4820C12.*

Transient Immunity

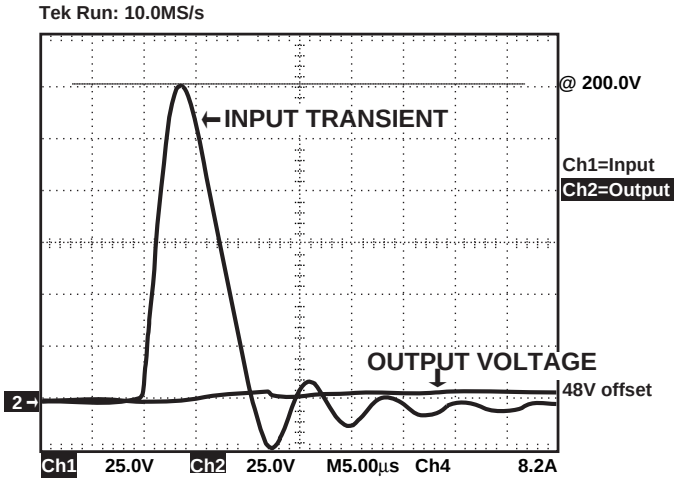


Figure 2*— Output response to a transient on the 48V input of a FM48-FiltMod/IAM48 combination.*

Typical Transient, Surge Protection and Filtering Solution

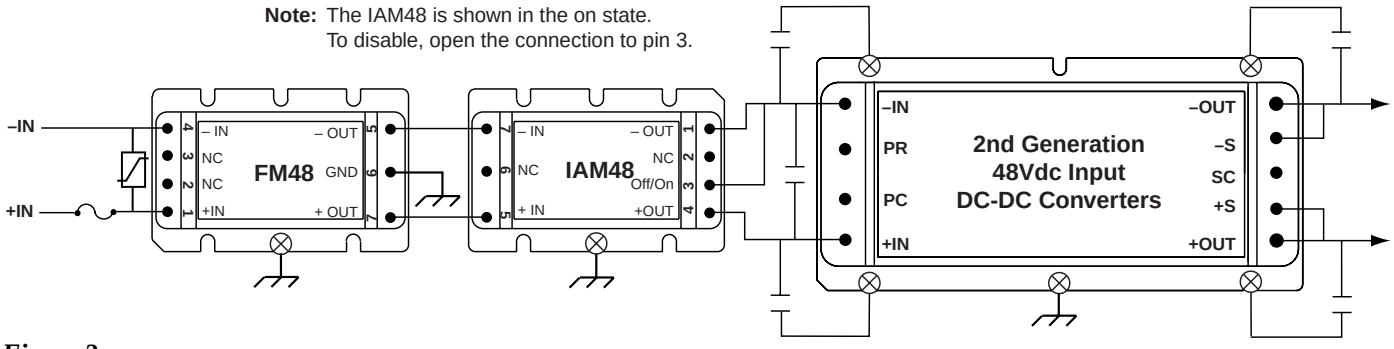
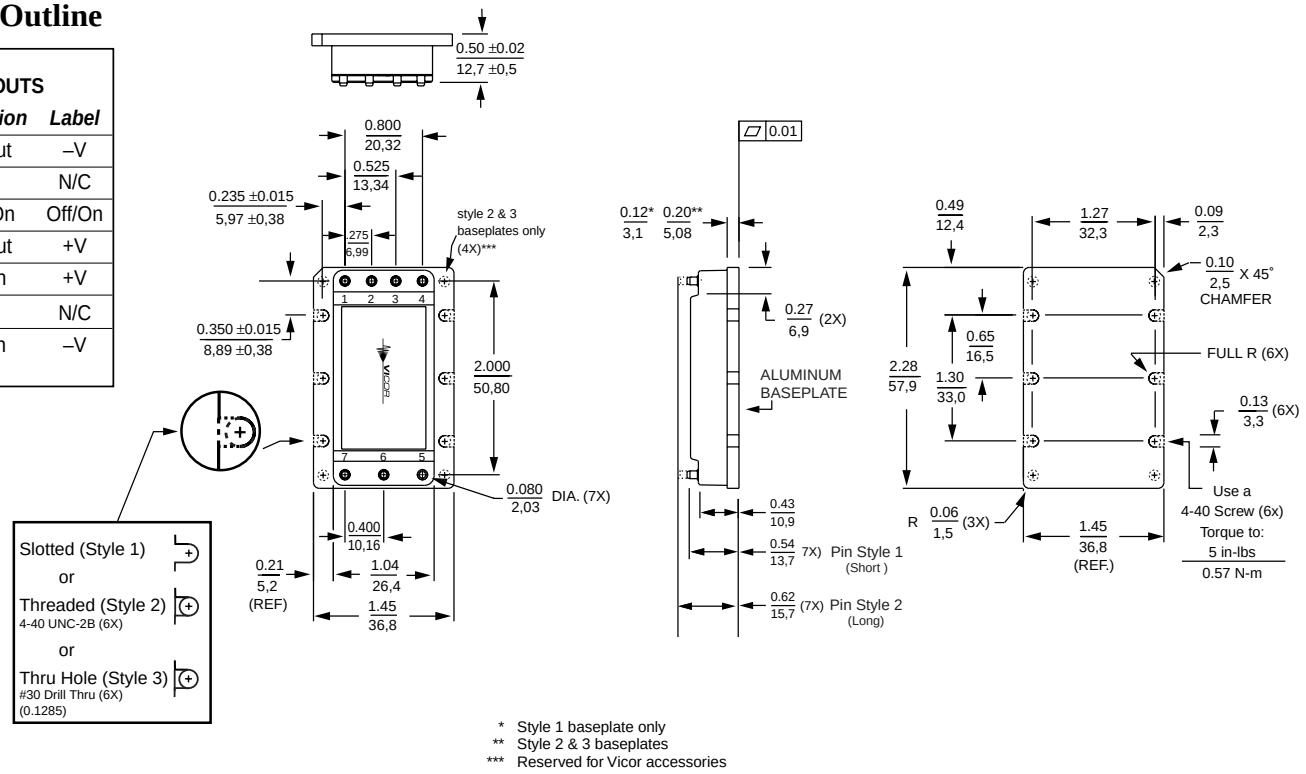


Figure 3

Mechanical Drawings (IAM48)

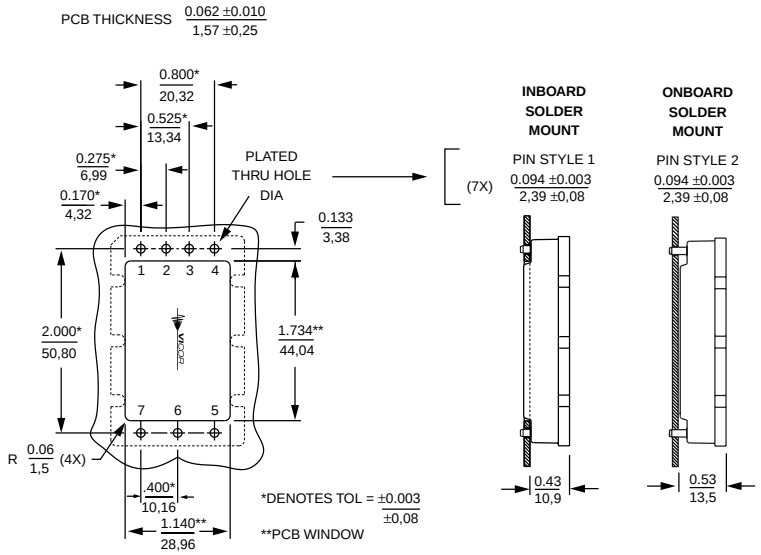
Module Outline

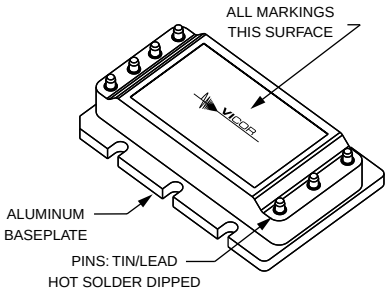
PIN OUTS		
No.	*Function*	*Label*
1	–Vout	–V
2		N/C
3	Off/On	Off/On
4	+Vout	+V
5	+Vin	+V
6		N/C
7	–Vin	–V



* Style 1 baseplate only
** Style 2 & 3 baseplates
*** Reserved for Vicor accessories

PCB Mounting Specifications





Unless otherwise specified, dimensions are in inches / mm

Decimals	Tol.	Angles
0.XX	±0.01 / ±0.25	±1°
0.XXX	±0.005 / ±0.127	

Vicor's comprehensive line of power solutions includes modular, high density DC-DC converters and accessory components, configurable power supplies, and custom power systems.

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